THE SOURCE

NEWSLETTER OF THE NHDES DRINKING WATER SOURCE PROTECTION PROGRAM
ON THE WEB AT WWW.DES.STATE.NH.US/DWSPP

SPRING 2002

Water Resources Information From NH Geological Survey

Geology and water are inextricably linked. From lakes formed by retreating glaciers to groundwater moving through fractures in granite, the earth holds the key to water quantity and quality. We now have a new office within state government, the New Hampshire Geological Survey (NHGS), whose role is to provide information related to land and water resources.

Historically, a "geological survey" was a time-limited assessment of land, minerals, and water resources within a defined area. Today, state geological surveys are agencies within state governments that collect and disseminate geologic, water, and natural resource information. To assess the resources of the state, Governor John Page established the first geological survey of New Hampshire in 1839. On June 19, 2001, Governor Jeanne Shaheen signed into law HB 245, establishing the New Hampshire Geological Survey under the auspices of DES. The NHGS is composed of the former office of the N.H. State Geologist and DES's Water Management Section, and carries forward with many of the original duties assigned to these entities.

GEOLOGICAL MAPS

Geological maps are important tools for groundwater exploration, protection, and management. The 1997 *Bedrock Geologic Map of New Hampshire* provided the first integrated look at the statewide distribution of igneous and metamorphic rocks. Recent research by the U.S. Geological Survey (USGS) has shown that a strong correlation exists between particular rock types and arsenic concentrations in groundwater. In another example, the extended drought conditions in New England have placed an emphasis on groundwater availability. Due to the importance of surficial geologic materials such as sands and gravels for groundwater storage, there has been a large demand for surficial geology information. In an effort to provide high-quality surficial maps, the NHGS has been participating in the USGS STATEMAP cooperative mapping program. To date, the surficial geology for 63 of the 213 tiles that comprise New Hampshire have been mapped at the 1:24,000 scale.

WATER USER REGISTRATION AND REPORTING

Authorized by Chapter 402, Laws of 1983, the water user registration and reporting program went into effect in the summer of 1987. The program aims to gather data on the major uses of the state's water and the particular demands placed upon aquifers, streams, and rivers. To accomplish this, all facilities that use more than 20,000 gallons of water per day, averaged over a seven-day period, must register with NHGS. Currently there are 736 registered water users in New Hampshire.

Geological Survey Continued pg. 2

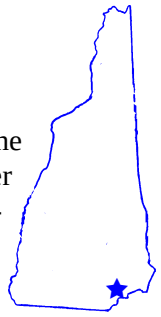
You Didn't Apply? Tell Us Why!

Although 39 percent of community water systems do not control the minimum sanitary protective radius around their wells … and only 11 percent of source water protection land is conserved … and when surveyed in 1997, water suppliers expressed keen interest in a Water Supply Land Conservation Grant Program, applications for this program have fallen off since the first year.

Due to the less-than-overwhelming response to the latest application round, DES will conduct a survey to see how the program can better suit municipalities' needs. The results will be used in discussions with the Legislature to secure funding for the future and to improve the program.

Please keep an eye out for the questionnaire in your mail and promptly return it. You can help us improve our efforts at meeting the needs of communities and protecting a valuable state resource. Contact Sherry Godlewski at 271-0688 or sgodlewski@des.state.nh.us with questions.

Spotlight on...Plaistow



Town-wide groundwater protection is the way to go in Plaistow. That's the approach being taken by the town's Source Water Protection Committee following a study of sources, threats, and protection options. Northeast Rural Water Association (NeRWA) worked with the committee to complete the study last year and continues to assist the town with implementation of the protection program.

Located on the Massachusetts border midway between Salem and Seabrook, Plaistow has no municipal water system. But with 51 public water systems, including 19 community systems, wellhead protection areas (WHPAs) cover much of the town. With half of residents served by private wells, the entire town is dependent on local groundwater resources, leading the Source Water Protection Committee to choose a town-wide protection program.

Since dense commercial development, particularly along NH Routes 125 and 121-A, places numerous potential contamination sources in the town's WHPAs, the committee worked with NeRWA to hold a workshop mid-way through the protection planning process. The workshop brought together water systems, business owners, town officials, and concerned citizens to guide the development of the final plan. NeRWA also used the results of DES's Drinking Water Source Assessments to identify the types of land uses that most often resulted in medium to high vulnerability ratings for the public wells. The final plan includes a number of elements: an education and outreach campaign designed to educate businesses and the general public on how to minimize contamination risks; a program of visits to businesses to ensure the use of best management practices; a used motor oil collection program; increased reliance on the town's aquifer protection ordinance to guide appropriate development; and an emergency response and water supply contingency plan.

This spring, Plaistow is focusing on its education and outreach program, and has obtained a Source Water Protection Grant from DES to work with the Conservation Law Foundation on a model groundwater protection ordinance. For more information, contact Jill Senter, Plaistow Source Water Protection Steering Committee, (603) 382-7458, jillsenter@attbi.net or Jennifer Palmiotto, NeRWA, at (800) 55-NERWA or jpalmiotto@neruralwater.org.

Geological Survey Continued from pg. 1

NH WATER WELL INVENTORY

The New Hampshire water well inventory was initiated in 1984 in conjunction with the passage of RSA 482-B which requires the licensing of water well contractors and submission of well completion reports. NHGS collects thousands of well reports per year, totalling 75,337 records to date. Since 1995, NHGS has located and determined coordinate values for 22,720 wells using global positioning satellite (GPS) technology. Water well data summaries are available upon request in several formats for a small fee. A summary of well depths and yields by town, entitled "Bedrock Water Wells in New Hampshire: A Statistical Summary of the 1984-1990 Inventory" is also available. It is anticipated that this report will be revised at five year intervals.

TECHNICAL SUPPORT

Finally, NHGS staff provide technical support for other state agencies. Current projects include assisting the Department of Justice with expertise regarding the characterization of soils and glacial sediments that are being decontaminated by incineration. It is also assisting DES's Waste Management Division with characterizing the hydrogeology and reviewing the reclamation plan for the abandoned Ore Hill mine site.

For more information contact the New Hampshire Geological Survey at 271-1973 or geology@des.state.nh.us.

The Source, the quarterly newsletter of DES's Drinking Water Source Protection Program, is published by:

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

6 Hazen Drive
P.O. Box 95
Concord, NH 03302-0095
(603) 271-3503

Asst. Commissioner	George Dana Bisbee
Division Director	Harry T. Stewart
Bureau Administrator	Anthony P. Giunta
Program Manager	Sarah Pillsbury
Editors	Nicole Clegg, Paul Susca

Printed on Recycled Paper

To subscribe contact Nicole Clegg at 271-4071
www.des.state.nh.us/dwspp

Closer To Home

Information for well owners and public water system customers

The Water-Wise Gardener

If next summer shapes up to be as dry as the past one, diminished water supplies and local water bans could impact your landscape. The average American family sprays a whopping 50% of their total daily water use on the ground. The following are just a few of the dozens of ways to save water without jeopardizing your landscape.

- Fix leaks. A 25-cent hose gasket saves both water and money. If you have a well, pumping a one drip per second leak can cost as much as $30 a month in electricity charges. Leaky hoses, sprinklers, and irrigation systems could really rack up the kilowatt-hours and cost you a mint.
- Stop watering your lawn and minimize its size. Lawns are the most water-intensive landscape areas. Turf grass survives quite a bit of water deprivation and, despite some browning, won't die completely. Consider replacing grass with mulched beds or lush moss.
- Use automated water sprinklers wisely. Don't water in the rain or irrigate the sidewalk. Invest in a rain sensor that shuts the system off during rain events and keep sprinkler heads adjusted so that they cover only the area needing irrigation.
- Use only organic mulch. The soil under impervious plastic mulch can dry out faster than if no mulch at all were used.
- Xeriscaping gives you a glorious garden, can reduce water use by nearly 70%, and increases property values significantly. Xeriscaping is a simple, logical landscaping technique based on grouping plants with similar water needs together in distinct watering zones. Locate the most drought-tolerant plants in the lowest water use "hot" zone, utilizing a southern or western exposure.
- Use native plants and ornamental grasses that require less water. Terrace and modify existing slopes, diverting runoff to water-hungry plants. Minimize the use of rocks, plastic, and sand in hot zones. These materials raise temperatures and often cause runoff problems. (Note: Merimack Village District offers a demonstration garden highlighting many of these water efficiency measures. Call 424-7171 for directions.)

For more information see our conservation web page at www.des.state.nh.us/h2o_conservation.htm or contact Diana Morgan at 271-2947.

Three Water Supply Bills Being Considered

At a press conference in January, Governor Jeanne Shaheen and DES announced legislation designed to address pressing water supply issues facing the state. The three bills deal with the extraction of large volumes of groundwater, regional cooperation among water supply systems, and water conservation. The proposals grew out of DES's experience implementing the large groundwater withdrawal program, as well as a joint DES-PUC study of regulatory barriers to regionalization and water conservation. The study was prompted in part by increasingly frequent water supply shortages in some parts of the state, related to drought conditions and ever-increasing water demands.

Senate Bill 410 would clarify requirements and procedures for large groundwater withdrawals and establish new permit standards for commercial withdrawals such as those for golf courses and bottled water. The bill would provide clearer authority for cities and towns to regulate large commercial groundwater withdrawals as well as create more opportunities for local input into the state's permitting process for such withdrawals. Regulation of public water supply wells would remain solely the state's responsibility.

Senate Bill 437 would address barriers to regional cooperation among water suppliers, creating incentives for water utilities to provide inter-municipal service. The bill would also foster and improve public water suppliers' ability to respond to emergency threats to their sources of drinking water.

Senate Bill 440 would require large water users to implement appropriate water use efficiency measures prior to DES's approving new large water withdrawals.

The text and progress of these and other bills can be tracked at http://www.gencourt.state.nh.us/ie/billstatus/quickbill.html.

Real New Hampshire People, Real Water Savings

This year, the Drinking Water Source Protection Program proudly unveils water efficiency case studies, true stories of New Hampshire facilities using state-of-the-art and tried-and-true methods to save water and, in most cases, money. Here's a preview:

Millipore Corporation (Jaffrey) supplemented their reverse osmosis membrane filtration system with a unit that recycles 70 percent of the waste stream. Their initial investment of $54,750 realized a payback period of just 1.6 years, due to annual savings from reductions in wastewater disposal and electrical energy use.

D. S. Cole Growers (Loudon) is a 150,000 square foot commercial greenhouse complex. Thanks to a closed loop, computerized irrigation method called "ebb and flow," Cole uses on average less than 1,400 gallons of water a day.

The 100-year old Society for the Protection of New Hampshire Forests is committed to the conservation of the state's natural resources. The new wing of the Society's Concord headquarters epitomizes this philosophy. Composting toilets, automatic shutoff faucets,and low flow showerheads allow for just 17 gallons of water use per day by the new bathrooms. Grey water from the building is routed through a filtration system to an indoor planter where ivy and other plants thrive on the nutrient-rich mix.

These are just a few of the stories of New Hampshire facilities saving water and money. Additional case studies focusing on Dartmouth-Hitchcook Medical Center (Lebanon) and Portsmouth Country Club will be available soon. To learn more, visit our conservation website at www.des.state.nh.us/h2o_conservation.htm. If you have a water conservation story to share, contact Diana Morgan at 271-2947.

Source Protection Grants Gaining Popularity

Applications for the 2002 Source Water Protection Grant program doubled to over 30, and 18 projects, totaling $254,061, were approved. Unlike in the past where all eligible projects were funded, projects had to be ranked according to specific criteria this year. The ranking criteria will be available in the 2003 application so that applicants know what elements obtain the highest ranking.

Eight of the 18 approved projects address source security, vulnerability assessment, and emergency response planning. Of those eight, five grants totaling $53,945 will pay for security measures at wellheads and pump houses. Two additional systems will receive funds to conduct vulnerability assessments and develop emergency response plans. Finally, Pennichuck Water Works will stencil and map storm drains in its watershed. Maps will be distributed to emergency response teams to help them prevent contamination during emergencies.

Non-security projects for this year include protecting a surface water supply source by investigating various protection opportunities, performing a watershed analysis and developing a model protection ordinance. The Lakes Region Planning Commission will address the need for collaborative drinking water resource planning and protection for Belmont, Tilton and Northfield. Manchester Water Works and LifeWise Community Projects will receive funds to promote source water protection education to schoolchildren.

The next round of grants will be this fall with applications sent in September and due in mid-November. Questions regarding the program or requests to be added to the mailing list should be directed to Johnna McKenna at 271-7017 or jmckenna@des.state.nh.us. Last year's application can be found on the web at www.des.state.nh.us/dwspp along with a list of previously funded grants.

6 Hazen Drive, Concord, NH 03301
NEW HAMPSHIRE DEPARTMENT OF Environmental Services

PRSRT STD
U.S. Postage
PAID
Concord, NH
Permit #1478